

WHAT IS CLAIMED IS:

1. A rigid plate assembly being receivable on a rotatable platen in a CMP machine, comprising:

a rigid plate member having a top surface and a bottom surface;

a polishing pad provided on said top surface, thereby forming a rigid plate assembly, wherein said polishing pad is adhesively bonded to said rigid plate member, and

wherein said rigid plate assembly is suctioned onto a top surface of a rotatable platen.

2. The rigid plate assembly being receivable on a rotatable platen in a CMP machine, according to claim 1, wherein said rigid plate member includes alignment pins protruding from said bottom surface thereof, said alignment pins being receivable into guide openings formed said rotatable platen.

3. A CMP polishing unit, comprising:

a rigid plate member having a top surface and a bottom surface;

a polishing pad provided on said top surface, thereby forming a rigid plate assembly, wherein said polishing pad is adhesively bonded to said rigid plate member, and

a rotatable platen having a vacuum channel for asserting a vacuum on said rigid plate member.

4. The rigid plate assembly being receivable on the rotatable platen according to claim 3, wherein at least one vacuum channel is formed within the rotatable platen.

5. The rigid plate assembly being receivable on the rotatable platen according to claim 4, wherein said at least one vacuum channel includes at least one cavity in a top surface of said rotatable platen to allow the rigid plate assembly to be suctioned with a vacuum.

6. The rigid plate assembly being receivable on the rotatable platen according to claim 4, wherein said at least one vacuum channel is coupled to a source of a releasable vacuum force adapted to act on said bottom surface to bias said rigid plate assembly towards the rotatable platen.

7. The rigid plate assembly being receivable on the rotatable platen according to claim 6, wherein the source of the releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen.

8. The rigid plate assembly being receivable on the rotatable platen according to claim 7, wherein the vacuum source comprises a vacuum and a vacuum line, and wherein the vacuum line opens to the at least one vacuum channel and couples the at least one vacuum channel to the vacuum source.

9. The rigid plate assembly being receivable on the rotatable platen according to claim 3, further comprising:

pin members protruding from said bottom surface; and

guide openings formed in the top surface of the rotatable platen, wherein said guide openings receive said pin members.

10. The rigid plate assembly being receivable on the rotatable platen according to claim 3, further comprising:

self alignment structures used to self align the rigid plate assembly receivable on the rotatable platen.

11. The rigid plate assembly being receivable on the rotatable platen according to claim 5, wherein

said at least one vacuum channel comprises a single cavity, circular in dimension, having a single diameter greater than at least half of the diameter of the rotatable platen.

12. The rigid plate assembly being receivable on the rotatable platen according to claim 5, wherein

said at least one vacuum channel comprises a plurality of cavities, arranged to linearly radiate from the center of the top surface of the rotatable platen.

13. A method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus, comprising:

adhesively arranging a polishing pad on a top surface of said rigid plate member, thereby forming a rigid plate assembly; and

suctioning said rigid plate assembly onto a top surface of said rotatable platen.

14. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 13, further comprising:
forming at least one vacuum channel within the rotatable platen.

15. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 14, wherein said at least one vacuum channel is formed by at least one cavity in a top surface of said rotatable platen.

16. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 13, further comprising coupling said at least one vacuum channel to a source of a releasable vacuum force adapted to act on said bottom surface to pull said rigid plate assembly towards the rotatable platen.

17. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 16, wherein the source of the releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen.

18. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 16, wherein the vacuum source comprises a vacuum and a vacuum line, and the vacuum line opens to the at least one vacuum channel and couples the at least one vacuum channel to the vacuum.

19. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 13, further comprising:

forming pin members protruding from said bottom surface; and

forming guide openings within said rotatable platen and opening to the upper surface thereof, wherein said guide openings receive said pin members.

20. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 13, wherein said suctioning is performed by asserting a vacuum between said rigid plate member and said rotatable platen.

21. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 20, wherein said vacuum is selectively applied.

22. The method to use a vacuum to hold a rigid plate assembly to a rotatable platen in a polishing apparatus according to claim 13, further comprising:

automatically aligning the rigid plate assembly with respect to the rotatable platen upon suctioning the rigid plate assembly onto the rotatable platen.